Division 1
General Requirements

PART 1 –GENERAL

This project involves the cleanup of sediment deposits containing elevated concentrations of polychlorinated biphenyls (PCB) at the Upriver Dam PCB Sediment Site in Spokane County, Washington. This cleanup is being accomplished in accordance with a Consent Decree (CD) executed in August 2005 between the State of Washington Department of Ecology (Ecology), and the Owner, Avista Development, Inc. (Avista).

The project involves two areas of work: Deposit 1 in the Spokane River just upstream of the Upriver Dam, and Deposit 2, which comprises two separate locations in side channels of the river, about 3 miles upstream of the Upriver Dam.

1.01 SUMMARY OF WORK AT DEPOSIT 1

Deposit 1 lies along the north portion of the Spokane River, beginning approximately 150 feet upstream of Upriver Dam, and continuing approximately 2,100 feet upstream. Beyond the upstream boundary of Deposit 1, the river makes a slight bend that effectively directs river flow away from Deposit 1, thereby minimizing erosive forces on this sediment deposit. Deposit 1 is located in an old river channel that has retained its shape while the rest of the channel to the south of the deposit has been subjected to lateral scour as the river turns past the bend.

This fine-grained sediment deposit (Figure 2) is located within approximately 3.6 acres of the 17-acre Upriver Dam impoundment. Deposit 1 consists of relatively fine-grained (i.e., silty sand) and wood waste materials that have accumulated within deeper, lower energy portions of the former river channel immediately above Upriver Dam. Data collected during previous investigations indicate that PCB levels peak at depths well below the sediment surface, and PCB concentrations decrease steadily in shallower intervals.

The minimum thickness of the specified cap system for Deposit 1 is 13 inches. The bottom layer of coal will be placed first. The coal layer will be placed to a minimum of 4 inches thickness. The coal layer will then be overlain with a minimum of 6 inches of clean sand. The final gravel armor layer will be a minimum of 3 inches. Thus, the complete cap system will have a minimum thickness of 13 inches.

The placed thickness will be verified in the field with detailed construction monitoring observations (e.g., piston core sampling) to ensure that the minimum thicknesses are attained.

1.02 SUMMARY OF WORK AT DEPOSIT 2

Deposit 2 is a relatively small area (approximately 0.25 acres) with some pockets of sediments having elevated PCB concentrations. It is located in an emergent wetland area within north bank side channels near Donkey Island (River Mile [RM] 83.4). It consists

of fine-grained deposits of sediment that have come to reside in backwater channels in the Donkey Island area. These silty sand deposits are confined to low energy depositional areas, where they overlie larger riverine materials (i.e., gravels and cobbles). The Deposit 2 area is a highly variable environment, consisting of areas that are seasonally inundated as well as channels that have standing water throughout the year.

The designed remedy for Deposit 2 includes removal of sediments containing PCB concentrations above the regulated sediment cleanup level, and backfilling the dredged areas with clean sand. Soft sediments will be removed to a depth of 12 to 18 inches below the existing mudline. The dredged area will be backfilled with clean sand such that it is returned to its pre-dredge elevations.

1.03 MEETINGS, PROGRESS SCHEDULES, AND REPORTS

A. Meetings

1. A preconstruction meeting will be scheduled after issuance of Notice to Proceed.
2. In General, project meetings will be held weekly at the job site in accordance with a mutually acceptable schedule. The Engineer will conduct project meetings throughout the construction project.
3. The purpose of project meetings will be to enable orderly review of progress during construction and to provide for systematic discussion and analysis of problems that might arise relative to execution of the work among Ecology, the Owner, and/or the Contractor.
4. Special meetings are to be called at the discretion of the Engineer.

B. Schedules

1. To ensure planning to execute the work in the required Contract Time and to avoid conflicts with other concurrent construction.
2. To establish the schedule standard against which completion of the Contract is judged.
3. To assist the Engineer in monitoring progress and for the assessment of Contract change impacts.
4. To assist the Engineer and Contractor in determining the completed work for approval of the Application for Payment.

All schedules are to be submitted in hard copy and electronically with data files.

1. Draft construction schedule: submit at the preconstruction conference.

2. Revised draft construction schedule: submit no later than 15 days after the effective date of Notice to Proceed.
3. Monthly update schedules: submit with each Application for Payment.
4. Three-week look ahead schedule: submit in the weekly progress meetings.

C. Schedule of Values: to provide an allocation of the Contract Price for measurement of monthly progress and payment.

1. Draft schedule of values: submit within 15 days after effective date of Notice to Proceed.
2. Final schedule of values: submit within 30 days after effective date of Notice to Proceed.

D. Reports: to provide a qualitative and quantitative document for record and discussion of work progress to date, planned progress, schedule changes, and monthly progress and payments.

1. Daily reports (when required)
2. Weekly Reports
3. Monthly cash flow reports with each Application for Payment
4. Monthly production reports (when required)
5. Monthly reports with each Application for Payment.

PART 2 –PRODUCTS: *NOT USED*

PART 3 –EXECUTION: *NOT USED*

END OF SECTION 01110

PART 1 –GENERAL

1.01 DESCRIPTION OF WORK

A. This section includes the requirements for health and safety for site workers and the adjacent community. It is assumed that, at a minimum, the Contractor shall meet all provisions of Chapter 296-155 Washington Administrative Code (WAC), Safety Standards for Construction. This Contract includes excavation of contaminated sediments and earthwork activities in other sediments and soils with low to moderate contamination levels. All Contractor activities shall comply with Hazardous Waste Operation and Emergency Response, 29 Code of Federal Regulations (CFR) 1910.120, and hazardous waste operations regulations, Chapter 296-62 WAC, Part P, where applicable. The work of this section includes, but is not limited to, worker certification, health and safety plans, personal protective equipment (PPE), health and safety equipment, decontamination, and engineering controls.

B. Many of the work tasks will place workers in the probable position of coming in contact with contaminated sediment. Therefore, the Contractor shall be required to comply with 29 CFR 1910.120 and Chapter 296-62 WAC, Part P. The Contractor Health and Safety Plan (CHASP; see Part 3.03 of this section for specific contents) shall clearly define health and safety requirements for specific site activities. At a minimum, 40-hour health and safety training will be required for:

1. Workers performing construction activities within excavations and placement of backfilling and capping materials;
2. Workers handling decontamination residuals and other potentially contaminated materials;
3. Workers in contact with spoils from pile maintenance or other subsurface operations; and
4. Workers performing dredging activities outside of enclosed equipment.

The CHASP may allow for reduced training requirements following exposure monitoring if deemed appropriate by the Contractor's Health and Safety Representative.

C. When training requirements are specifically defined for site activities, increased supervision and monitoring must be performed by the Contractor. At a minimum:

1. All construction activities with a potential risk of exposure to dredged and excavated material must be supervised by personnel who at a minimum have 40-hour health and safety training and are able to identify potential upgrades needed in the level of health and safety protection.
2. The Contractor's Health and Safety Representative shall be on site at the start of all hazardous waste operations and shall monitor all earthwork-related activities.
3. A Site Specific Safety and Hazard Awareness Briefing shall be required for all workers and other people entering the site. Briefings will inform these individuals of the chemical hazards of the sediment and define appropriate protections to minimize potential exposure. A written record of the date(s) and time(s) of such training and of the attendees is required.

D. All required health, safety, and environmental monitoring for worker health and safety shall be the responsibility of the firm physically doing the work.

1.02 SUBMITTALS

A. Within no more than 21 days of Contract award, the Contractor shall prepare and submit a site-specific CHASP (see Part 3.03) to the Engineer and the Owner for review and approval. The Engineer and Owner will review the CHASP only for completeness, not to approve it.

B. No earthwork may commence until the Contractor has submitted the CHASP, and the Engineer and Owner have acknowledged receipt of same.

C. The Contractor is responsible for implementation of the CHASP. The Engineer and Owner, however, reserve the right to halt work in the event of health and safety violations.

1.03 JOB CONDITIONS

A. The Contractor attests that they have visited the site to become familiar with the quantity, location, and character of existing materials and contaminants on the site. The Contractor agrees that the premises were made available prior to submission of bids for whatever inspection and tests the Contractor deemed appropriate. The Contractor agrees that remedial investigation reports were made available for supplemental documentation of site conditions. The Contractor assumes full responsibility for compliance with all applicable health and safety requirements as mandated in city, county, state, and federal statutes.

B. The Contractor shall have a Health and Safety Representative. The Health and Safety Representative shall, at a minimum, be a Certified Industrial Hygienist (CIH). The Health and Safety Representative shall be on site at the beginning of any hazardous waste operations and available for consultation as necessary and as required by site conditions for the Contractor's continued operations.

PART 2 –PRODUCTS: *NOT USED*

PART 3 –EXECUTION

3.01 PREPARATORY WORK

A. Inspection:

1. The Contractor's Health and Safety Representative shall inspect the site and determine area- or activity-specific and worker-specific protection requirements. The Contractor will not be allowed to mobilize work crews for earthwork activities until a CHASP has been submitted to the Engineer.
2. After mobilization, the Contractor's Site Safety Officer shall monitor work efforts and shall determine the need for additional worker protection as required by the work being performed or by action levels specified in the CHASP.
3. Prior to commencement of the work, the Contractor shall assess the structural integrity of all structures and provide adequate means of worker protection.
4. The Health and Safety Representative shall supervise and monitor the Site Safety Officer and shall verify that all work is performed in accordance with the CHASP.
5. Site safety meetings will be held a minimum of once per week for each crew to address changing site conditions, activities, and personnel. Site safety meetings shall also be held at the start of each major task and whenever site conditions that affect the safety of personnel change. In addition, Safety and Hazard Awareness Training is required for all workers and others entering the site.

B. Discrepancies:

1. In the event of a discrepancy related to any aspect of the CHASP, the Contractor shall not proceed with Contract work until such

discrepancies have been resolved and a method for handling any associated risk has been determined and implemented.

2. Health and safety for workers and the surrounding community is the responsibility of the Contractor's Health and Safety Representative.

3.02 WORKER CERTIFICATION REQUIREMENTS

Prior to initiating any work subject to the CHASP, the Contractor shall provide the Owner and Engineer with written documentation of employee training and medical certifications as necessary for work required under 29 CFR 1910.120 and 296-62 WAC, Part P.

A. Specifically, documentation of the following is required for each site worker for sites and work phases determined by the Contractor's Health and Safety Representative to fall under the requirements of 29 CFR 1910.120 and Chapter 296-62 WAC, Part P:

1. Initial 40-hour (or 24-hour or 80-hour, where appropriate) hazardous waste health and safety training and current annual 8-hour refresher training, as per requirements of the Occupational Safety and Health Administration (OSHA) or equivalent requirements of the Washington Industrial Safety and Health Administration (WISHA).

2. Enrollment in a medical monitoring program, with clearance within the previous 12 months from a licensed physician allowing the worker to participate in field activities and use respiratory protective equipment, if required in the CHASP.

3. Current respiratory fit testing certification, if respiratory protective equipment is required.

4. Provision of appropriate PPE for each worker, as necessary, at the highest level of protection identified for the site.

B. In addition, documentation of the following is required for specified site workers for sites and work phases determined by the Contractor's Health and Safety Representative to fall under the requirements of 29 CFR 1910.120 and Chapter 296-62 WAC, Part P:

1. Eight-hour OSHA (or WISHA equivalent) hazardous waste supervisory training (required for the Field Supervisor).

2. Current CPR and first aid certification for at least one member of each crew.

3.03 HEALTH AND SAFETY PLAN

A. The CHASP shall be developed by the Contractor for use by the Contractor. The CHASP shall be consistent with all applicable local, state, and federal health standards and guidelines implemented through, but not limited to, OSHA, WISHA, the National Institute of Occupational Safety and Health (NIOSH), the American Conference of Governmental Industrial Hygienists (ACGIH), and EPA. Where these are in conflict, the more stringent requirement shall be followed. The plan shall protect on-site and off-site personnel from the potential physical, chemical, and/or biological hazards particular to the site. The CHASP shall be reviewed and approved by the Contractor's management and Health and Safety Representative.

The following points shall be addressed in the CHASP, at a minimum:

1. The Contractor's definition of site-specific work activities that the Contractor has determined would meet the WISHA definition of Hazardous Waste Operations or would require 40-hour health and safety training.
2. Identification of specific chemical and physical hazards that may occur during the project.
3. Description of site control and decontamination procedures for personnel and equipment to be used.
4. Explanation of potential emergencies and contingency plan of action, including description of the route to the nearest appropriate hospital and posting of emergency phone numbers on the job site.
5. Delineation of specific tasks and the associated hazards and protective measures to be instituted. This will cover all tasks performed under this contract, including but not limited to demolition, dredging, capping and backfilling, bulkhead replacement, and pile driving activities.
6. Other pertinent or required issues.

B. No earthwork may commence until the Contractor has submitted the CHASP and received acknowledgement of its completeness as described in Section 1.03.

3.04 PERSONAL PROTECTIVE EQUIPMENT

A. The appropriate level of personal protection will be identified for specific tasks in the CHASP. As work progresses and hazards are identified, the Contractor's staff shall notify the Contractor's Site Safety Officer. If hazards are identified that require a level of protection greater than Level C, work will be suspended and the Engineer and the Contractor's Health and Safety Representative will be

notified. The Health and Safety Representative will determine what actions are required before work can restart.

B. At a minimum, all on-site personnel will wear a hard hat, orange reflective work vests, long pants, steel-toed boots, safety glasses, and a proper floatation device when on the water.

C. The Contractor shall provide additional PPE, other than respiratory PPE, for the use of the Owner's employees and representatives and other visitors authorized by the Owner. PPE will be provided in sufficient numbers and sizes that at least five visitors may be accommodated at one time. PPE shall be appropriate for any location on the site and for any work being conducted at that time. This PPE shall include hard hats, safety glasses, orange reflective work vests, boot covers, and personal floatation devices for work near water.

3.05 HEALTH AND SAFETY EQUIPMENT

A. The CHASP shall outline specific health and safety equipment required at each work site.

B. At a minimum, the Contractor shall have and maintain the following equipment at the site:

1. First aid kit
2. Fire suppression equipment
3. Emergency eye wash facility
4. Decontamination facilities
5. Traffic and pedestrian control
6. First aid station

3.06 ENGINEERING SAFETY CONTROLS

A. The CHASP shall describe engineering controls to protect health and safety during equipment use and against atmospheric hazards.

B. At a minimum, engineering controls shall include:

1. Roll-over cages for bulldozers, backhoes, loaders, and tractors
2. Back-up alarms for all trucks and heavy equipment
3. Decontamination of equipment leaving the site

4. Barricades for open trenches, pits, excavations, and for structure demolition.

3.07 OTHER CONTROLS

A comprehensive survey of existing utilities shall be performed prior to the initiation of excavation at depths greater than 1 foot. The survey shall include a review of applicable site drawings depicting utility locations in the demolition and excavation areas and an on-site inspection by a utility location company.

PART 4 –MEASUREMENT AND PAYMENT

No separate or extra payment will be made to the Contractor for Health and Safety. Payment for Health and Safety shall be included in all appropriate items on the Schedule of Prices for which Health and Safety is required. The Contractor shall provide all required health and safety equipment, first aid equipment, tools, monitoring equipment, and ancillary equipment and methods required to ensure worker and community health and safety.

No separate or extra payment will be made to the Contractor for survey of existing utilities. Payment for utility survey and any location services shall be included in all appropriate items.

END OF SECTION 01250

PART 1 –GENERAL

1.01 DESCRIPTION OF WORK

This section describes requirements for preconstruction submittals and applications for payment, including the final application for payment, and provides measurement and payment descriptions.

1.02 REQUIRED SUBMITTAL DOCUMENTS

A. Preconstruction Submittal:

As part of the Preconstruction Submittal, the Contractor shall submit a complete bid schedule of unit prices that shows the value assigned to each part of the work (activity), including allowance for overhead and profit.

B. Applications for Payment:

For each application for payment, the Contractor shall submit the following:

1. Completed "Application and Certificate for Payment" on form as established by the Engineer.

2. Updated schedule of construction.

3. Certification that as-built drawings are current.

4. Certification of Payment to subcontractors and suppliers, for previous pay period.

C. Final Application for Payment:

Refer to General Conditions for other requirements. For final application for payment, the Contractor shall submit the following:

1. Completed "Application and Certificate for Payment" on form as established by the Engineer showing the work is 100 percent complete.

2. As-built record documents.

1.03 PREPARATION OF APPLICATIONS FOR PAYMENT

A. Type all required information on the forms.

B. Execute certification of signature of authorized officer.

C. List each authorized Change Order, listing Change Order number and dollar amount as for an original item of work.

D. Provide a letter certifying payment to subcontractors.

1.04 SUBMITTAL PROCEDURES

Submit two originally signed copies of each application for payment at times stipulated by the Engineer. Applications are to be submitted for approval to the Engineer with originally signed copies of supporting data.

1.05 UNIT PRICES

Any unit prices listed in the Bid Form are complete including labor, equipment, products, fees, and any incidental charges, including allowance for overhead and profit.

1.06 MEASUREMENT STANDARDS

Measurement and payment descriptions for each item listed in the Bid Form are as set forth throughout the applicable sections of the Contract documents and as noted herein.

A. All bid items of work acceptably completed under the Contract will be measured by the Engineer according to United States standard measure.

B. Measurements will be made as hereinafter provided unless otherwise provided for by their individual measurement specifications.

C. The method of measurement and computations to be used in determination of quantities of material furnished or of work performed under the Contract will be those methods generally recognized as conforming to accepted engineering practice and will be carried to the proper significant figures or fractions of units for each item.

D. Items of work for which payment is made by a “Lump Sum” will be measured as a complete unit. Partial payment, if made, will be made according to the completed percentage of the various components of the lump sum item detailed in the Schedule of Unit Prices.

E. Weighing Equipment:

1. Scales for the weighing of natural, manufactured, or processed construction materials obtained from natural deposits, stockpiles, or bunkers, which are required to be proportioned or measured and paid for by weight, shall be furnished, erected, and maintained by the Contractor, or be certified, permanently installed commercial scales.

2. In the event the Contractor elects to furnish, erect, and maintain weighing equipment at the site, such equipment shall meet the requirements and conditions set forth in State of Washington Standard Specifications for Road, Bridge and Municipal Construction, current edition.

F. Measurement of Quantities:

1. Unless otherwise specified, measurements will be made horizontally or vertically. In determining the area for items bid on a square yard basis, the measurements will be on the neat dimension indicated on the Contract drawings or as altered by the Engineer. No deductions in area will be made for individual fixtures having an area of 9 square feet or less.

2. Structures will be measured according to neat lines indicated on the drawings or as altered by the Engineer to fit field conditions.

3. All items that are measured by the linear foot, will be measured parallel to the base or foundation upon which such structures are placed, unless otherwise noted on the drawings or otherwise specified.

4. In computing volumes of excavation, backfill, or capping, the method used will be based on the difference between the pre- and post-construction surveys or as stated in the Section 02325 of these specifications.

5. The term "ton" means the short ton consisting of 2,000 pounds avoirdupois. All materials that are measured or proportioned by weight shall be weighed in accordance with the requirements of Part 1.07 E of this section. If material is shipped by rail, the car weight may be accepted, provided that payment is made for only the actual weight of material used. However, car weights will not be acceptable for material that is to be passed through mixing plants. Trucks used to haul material being measured by weight shall be weighed empty at least daily at such times as the Engineer directs, and each truck shall bear a plainly legible identification mark.

6. Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Engineer, provided that the body is of such shape that the actual contents may be readily and accurately determined. When required by the Engineer, the loads shall be leveled to facilitate measurement when the vehicles arrive at the point of delivery.

7. When a complete structure or structural unit or piece of equipment is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

8. No measurement will be made for work performed or materials placed outside of lines indicated on the plans or established by the Engineer; materials wasted, used, or disposed of in a manner not called for under the Contract; material rejected after it has been placed by reason of the failure of the Contractor to conform to the provisions of the Contract; hauling and

disposing of rejected materials; material remaining on hand after completion of the work; or other work or material payment which is contrary to the provisions of the Contract.

G. Adjustment to unit price for the Optional Items shown in the Schedule of Unit Prices (Section 00410) will not be made whether the item is not used or if large amounts more are required. Quantities shown are for comparative purposes only.

PART 2 –PRODUCTS – NOT USED.

PART 3 –EXECUTION – NOT USED.

PART 4 –MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for the work required by this section. The cost for this portion of the work will be considered incidental to, and included in the payments made for, the applicable bid items in the Schedule of Unit Prices.

Failure of the Contractor to provide a complete and accurate payment application as required in this section may result in delayed or partial payment and will not be subject to claims for interest or cost of borrowing.

END OF SECTION 01270

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

A. This section describes the Contractor's quality control requirements, duties, and responsibilities during execution of the work. The intent of this section is to require the Contractor to establish a necessary level of control that will:

1. Adequately provide for the production of acceptable quality materials and skilled labor.

2. Provide sufficient information to assure both the Contractor and the Engineer that the specification requirements are and have been met.

B. The Contractor shall establish, provide, and maintain a Construction Quality Control (CQC) Plan as specified herein, detailing the methods and procedures that will be taken to ensure that all materials and completed construction elements conform to contract plans, technical specifications, and other requirements, whether these elements be manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified herein and elsewhere in the contract technical specifications, it is the responsibility of the Contractor to ensure that construction and construction quality control are accomplished in accordance with the stated purpose and specifications as described herein.

C. The Contractor shall be prepared to discuss and present, at the Preconstruction Conference, his/her understanding of the quality control requirements. The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the Quality Control Program has been reviewed and approved by the Engineer. No partial payment will be made for materials subject to specific quality control requirements until the Quality Control Program has been reviewed and approved.

D. Quality control requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from any acceptance testing requirements. Acceptance testing requirements are the responsibility of the Engineer. The Contractor shall cooperate fully in facilitating the sampling and inspection necessary for an effective acceptance testing program by the Engineer.

1.02 SUBMITTALS

A. Prior to the start of any production, off-site fabrication, site preparation, excavation, or capping, the Contractor shall submit the following documents to the Engineer for approval:

1. CQC Plan
2. Proposed Project Administrator's qualifications

B. For each day of construction operations, the Contractor shall submit the following as part of their Daily Construction Report:

1. Daily CQC Reports
2. Daily Inspection reports
3. Daily Test reports

PART 2 – PRODUCTS

Products that are used to accomplish or be incorporated into the work of this section shall be as selected by the Contractor, subject to approval of the Engineer.

PART 3 – EXECUTION

3.01 CONTRACTOR QUALITY CONTROL PROGRAM

The Contractor shall establish a Quality Control Program to perform inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. This Quality Control Program shall ensure conformance to applicable specifications and plans with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Program shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of quality control.

3.02 CONTRACTOR QUALITY CONTROL (CQC) PLAN

A. The Contractor shall describe the Quality Control Program in a written document titled "Contractor Quality Control Plan," which shall be submitted to the Engineer not later than 14 days prior to the start of any production, off-site fabrication, site preparation, excavation, or capping. The Contractor will not be allowed to start any production, off-site fabrication, site preparation, excavation, or capping until the CQC Plan is approved. The CQC Plan will be used to document inspections, monitoring, surveys, and other actions to be taken by the Contractor to ensure that the work complies with all Contract requirements.

B. The CQC Plan shall demonstrate the Contractor's understanding of the total Quality Control requirements of the Contract and generally how these will be utilized to control all processes within material/construction tolerances and acceptance criteria.

C. The CQC Plan shall be organized to address, as a minimum, the following items:

1. General requirements;
2. Quality control organization;
3. Inspection and testing requirements;
4. Inspection and test plan;
5. Documentation of quality control activities; and
6. Requirements for corrective action when quality control and/or acceptance criteria are not met.

D. The Contractor is encouraged to add any additional elements to the CQC Plan deemed necessary to adequately control all production and/or construction processes required by this Contract.

E. Control of Non-conforming Items:

The CQC Plan shall include a non-conformance procedure that provides for the identification, documentation, disposition, and control of non-conforming items, and identifies the responsibilities for preparation, review, approval, and the proposed resolution. In addition, the procedure shall include requirements for:

1. Documentation of re-inspection results
2. Tagging and segregation, whenever practical
3. Approval of repair or accept-as-is dispositions by the Engineer, prior to implementation
4. Review of completed non-conformance reports by the Engineer.

Materials and items that do not conform to the applicable drawings, specifications, or documents shall be identified as non-conforming and, whenever practical, segregated to prevent their installation or inadvertent use. Non-conformances shall be reviewed by the responsible personnel, and disposed of accordingly.

When the associated documentation for received material or items, such as manufacturer inspection or test reports, Certified Material Test Reports, and Certificates of Compliance or Conformance indicate that the material or items do

not comply with the specification or drawing requirements, the subject material or item shall be treated as non-conforming and not used until the non-conformance is resolved.

F. Control of Special Processes:

The CQC Plan shall identify special processes and the means by which the Contractor will ensure that they comply with the requirements of the applicable codes and standards identified in the construction specifications. Personnel and procedures shall be qualified in accordance with the requirements of the applicable code or standard identified in the construction specification. When the construction specification requires procedures and/or personnel qualifications in excess of those defined and required by the codes, the additional requirements will be identified in the construction specification or additional procedures or instructions by reference to the required industry code or standard, or by specific description in the document.

Procedures and/or instructions for the performance of special processes must be placed at the work location prior to commencement of the work.

G. Control of Measuring and Test Equipment:

The CQC Plan shall establish a system for the calibration, maintenance, and control of measuring and test equipment used by the Contractor during construction. Procedures shall provide for the identification of each instrument or equipment item that requires calibration or checking, and the establishment of a calibration system based on the elapsed time or usage cycles.

Records of calibration shall be traceable to nationally recognized standards; otherwise, the basis for calibration shall be established and documented. Calibration standards used must meet the accuracy tolerance recommended by the manufacturer of the equipment being calibrated.

H. Supplier Quality Control:

The CQC Plan shall establish a system for the evaluation and selection of suppliers of material, items and services. The system shall include:

1. Documented review and assessment of potential suppliers' quality system.
2. Development of specified evaluation criteria.
3. Inclusion of applicable quality criteria in purchase documents.
4. Regular reviews and evaluations of suppliers' on-going quality performance.

I. The CQC Plan shall describe the responsibility, authority and interrelation of all personnel who manage, perform, and verify work affecting quality. This shall include personnel who need organizational freedom and authority to:

1. Initiate the actions necessary to prevent the occurrence of non-conformances.
2. Identify and record any product quality problems.
3. Initiate, recommend or provide solutions through designated channels,
4. Verify the implementation of solutions.
5. Control further processing, delivery or installation of non-conforming material or items until the deficiency has been corrected.

3.03 QUALITY CONTROL ORGANIZATION

The Contractor's Quality Control Program shall be implemented by the establishment of a quality control organization. An organizational chart shall be developed to show all quality control personnel and how these personnel integrate with other management/production and construction functions and personnel. The organizational chart shall be included in the CQC Plan. Qualifications of all proposed personnel and independent testing labs shall be documented and submitted in the CQC Plan.

The organizational chart shall identify all quality control staff by name and function, and shall indicate the total staff required to implement all elements of the Quality Control Program, including inspection and testing for each item of work. If necessary, different technicians can be utilized for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the Quality Control Program, the personnel assigned shall be subject to the qualification requirements indicated below. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

A. The Contractor shall designate an individual within its organization who is responsible for overall management of the Quality Control Program and has full authority to institute any and all actions necessary for the successful implementation of the Quality Control Program to ensure compliance with the Contract plans and technical specifications. This individual, termed the CQC Supervisor, shall report directly to a responsible officer of the construction firm and not to this project's line management.

B. The CQC Supervisor's qualifications shall be submitted to the Engineer for review and approval. At the option of the Engineer, the candidate(s) for CQC Supervisor shall be subject to interview by the Engineer prior to approval. The

Contractor's approved CQC Supervisor shall not be removed or replaced without prior written approval by the Engineer

C. The CQC Supervisor shall have the authority to stop the work when and where deemed necessary to ensure compliance with the Contract Documents.

D. Quality Control Personnel. The Contractor shall maintain a sufficient number of qualified quality control personnel to adequately implement the Quality Control Program. The Contractor shall provide sufficient qualified quality control personnel to monitor each work activity at all times. Quality Control Personnel shall report directly to the CQC Supervisor and shall perform the following functions:

1. Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by paragraph "INSPECTION AND TESTING REQUIREMENTS."

2. Performance of all quality control tests as required by the technical specifications and paragraph "INSPECTION AND TEST PLAN."

E. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The CQC Plan shall state where different personnel will be required for different work elements.

3.04 INSPECTION AND TESTING REQUIREMENTS

Quality control inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified herein.

A. The CQC Plan shall establish a system for ensuring that all inspections are performed in accordance with the Inspection and Test Plan defined in this section. The Contractor shall use only inspection personnel who are independent of craft supervision and field Engineering to perform quality verification inspection and testing.

B. The CQC Plan shall describe and specify control testing operations required to qualify, demonstrate, or ensure the quality and characteristics of items, site conditions, or the erection and construction of contract required items. All testing shall be performed in accordance with the Inspection and Test Plan.

C. Modifications, repairs, and replacements required as a result of test failures will be treated as non-conforming items and controlled in accordance with the controls for non-conforming items.

D. Inspection and testing activities must be performed in accordance with procedures that may be supplemented by specific or standard instructions, work operations, or planning documents, including inspection plans delineating inspection hold points. The inspection activities that shall be planned in advance include:

1. Receiving inspection
2. Construction inspection and testing
3. Installation inspection and testing

E. Inspection and test activities shall have documentation reflecting the applicable inspections or tests performed. Inspection and test procedures and instructions shall provide:

1. References to applicable documents, such as drawings, specifications, and procedures.
2. Identification of prerequisites and special-process control requirements, such as personnel, procedure or equipment qualifications, suitable and controlled environmental conditions, and calibrated instrumentation.
3. Identification of characteristics to be inspected.
4. Identification of individuals or groups responsible for performing the inspection.
5. Identification or frequency of inspection or sampling.
6. Provisions for establishing mandatory inspection hold points for witness by the Engineers.
7. Requirements that inspections of modifications repairs, and replacements be performed in accordance with either the original inspection procedure, instruction, plan, special procedures or plans appropriate to the work activity.
8. Requirements that inspection and test records contain:
    a) A description of the observation
    b) Record of the date and results of the inspection or test, including any special documentation and sign-off by the inspector
    c) Inspector identification
    d) Evidence as to acceptability of the results
    e) Verification that inspection or test operations are complete and acceptable
    f) Action taken to resolve any discrepancies noted

g) Adequate documentation to demonstrate that the completed inspections or tests have met the objectives defined in the Inspection and Test Plan.

F. Inspections shall be performed daily to ensure continuing compliance with contract requirements until completion of the particular feature of work. During field operations, quality control test results and periodic inspections shall be utilized to ensure the quality of all materials and labor. All equipment utilized in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The CQC Program shall document how these and other quality control functions will be accomplished and utilized.

3.05 PLANT INSPECTION

The Engineer or authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the Engineer conduct plant inspections, the following conditions shall exist:

A. The Engineer shall have the cooperation and assistance of the Contractor and the producer contracted for materials.

B. The Engineer shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.

C. If required by the Engineer, the Contractor shall arrange for adequate office or working space that may be reasonable needed for conducting plant inspections. Office or working space should be conveniently located with respect to the plant.

It is understood and agreed that the Engineer shall have the right to re-test any material that has been tested and approved at the source of supply after it has been delivered to the site. The Engineer shall have the right to reject only material that when re-tested, does not meet the requirements of the contract, plans, or specifications.

3.06 INSPECTION AND TEST PLAN

A. As a part of the overall Quality Control Program, the Contractor shall implement an Inspection and Test Plan, as required by the individual technical specifications. The test plan shall include the minimum tests and test frequencies required by

each technical specification item, as well as any additional quality control tests that the Contractor deems necessary to adequately control production and/or construction processes.

B. The Contractor shall prepare an Inspection and Test Plan that identifies all inspection and test activities required by the construction specification. The Inspection and Test Plan shall be included in their CQC Plan, and shall include:

1. An itemized listing of inspection and test requirements
2. A reference of documents for each plan
3. Inspection and test methods employed in determining compliance
4. Documentation requirements necessary to show evidence of compliance
5. Identification of the inspection or test status for work in process by using work sequence plans, inspection or test records, tags, markings, or other devices compatible with the item, system, or operation being inspected or tested. Work sequence plans shall identify hold and witness points for inspections and tests, which shall also be shown on the Project Schedule
6. Any other information or verification required to ensure compliance with contractual requirements
7. Verification that material marking is visible and correct material has been used
8. Specification item number (e.g., P-401)
    a) Item description
    b) Test standard (e.g., ASTM)
    c) Test frequency
    d) Control requirements

C. The Inspection and Test Plan shall contain a statistically based procedure of random sampling for acquiring test samples in accordance with ASTM D 3665. The Engineer shall be provided the opportunity to witness quality control sampling and testing

D. All quality control test results shall be documented by the Contractor as specified herein.

3.07 DOCUMENTATION

A. The Contractor shall maintain current quality control records of all inspections and tests performed. These records shall include factual evidence that the required inspections or tests have been performed, including type and number of

inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

B. Specific Contractor quality control records required for the contract shall include, but are not necessarily limited to, the following records:

1. Certified test reports for off-site testing and inspections shall be submitted.

2. Quality Control Records are those documents that have been reviewed and accepted by the Contractor as complete, correct, and legible. Quality Control Records shall include the documents such as:

   a) Drawings, specifications, procedures used for construction, procurement documents, inspections, and test records

   b) Submittals

   c) Personnel and procedure qualification records

   d) Material, chemical, and physical property test results

   e) Certificates of Compliance and shipment releases

   f) Supplier surveillance records

   g) Receiving inspection, storage, cleaning, and cleanliness control records

   h) Non-conformance reports and corrective action.

   All Quality Control records shall be identified in the CQC Plan and maintained in the Contractor's job site files. The Engineer shall be provided access to these files when requested. Upon the completion of the Contractor's contractual activities, these files shall be turned over to the Engineer.

   Quality control records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the Engineer daily as specified below. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the Contractor's Program Administrator.

3. Daily CQC Report. The Contractor shall prepare and maintain a Daily CQC Report of operations. The Daily CQC Report shall be attached to the Contractor's Daily Construction Report. At a minimum, information in this Daily CQC Report will include the date, period covered by the report,

equipment used, description of activity as identified by stationing and offset, quantity of material placed or excavated that day and to date, downtime and delays to the operation, health and safety status, and other relevant comments concerning conduct of the operation. The report shall include the results of all inspections, surveys, and monitoring activities and shall be signed by the Contractor's Superintendent or CQC Supervisor. The Daily CQC Report shall include the following elements:

a) Daily Inspection Reports. Each member of the Contractor's quality control personnel shall maintain a daily report of all inspections performed for both Contractor and subcontractor operations on a form acceptable to the Engineer. These daily inspection reports shall provide factual evidence that continuous quality control inspections have been performed and shall, as a minimum, include the following:

1) Technical specification item number and description
2) Compliance with approved submittals
3) Proper storage of materials and equipment
4) Proper operation of all equipment
5) Adherence to plans and technical specifications
6) Review of quality control tests
7) The daily inspection reports shall identify inspections conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible quality control technician and the Program Administrator and shall be attached to the Contractor's Daily CQC Report.

b) Daily Test Reports. The Contractor shall be responsible for establishing a system that will record all quality control test results. Daily test reports shall document the following information:

1) Technical specification item number and description
2) Test designation
3) Location
4) Date of test

5) Control requirements
6) Test results
7) Causes for rejection
8) Recommended remedial actions
9) Retests

Daily test reports shall be signed by the responsible quality control technician and the CQC Supervisor and shall be attached to the Contractor's Daily CQC Report. When required by the technical specifications, the Contractor shall maintain statistical quality control charts.

C. Document Control

The Contractor's CQC Plan must require that Contractor-generated documents pertaining to quality related items be controlled. The following types of documents shall be on controlled distribution to ensure that changes to them are transmitted and received when applicable:

1. Manuals
2. Instructions
3. Procedures
4. Specifications
5. Drawings
6. Inspection and test plans
7. Field change requests
8. Inspection Test and Manufacturing procedures

3.08 CORRECTIVE ACTION REQUIREMENTS

A. The CQC Plan shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the Quality Control Program as a whole, and for individual items of work contained in the technical specifications.

B. The CQC Plan shall detail how the results of quality control inspections and tests will be used for determining the need for corrective action and shall contain clear sets of rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

C. When applicable or required by the technical specifications, the Contractor shall establish and utilize statistical quality control charts for individual quality control tests. The requirements for corrective action shall be linked to the control charts.

3.09 OVERSIGHT BY THE ENGINEER

A. All items of material and equipment shall be subject to oversight by the Engineer at the point of production, manufacture, or shipment to determine if the Contractor, producer, manufacturer, or shipper maintains an adequate quality control system in conformance with the requirements detailed herein and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to surveillance by the Engineer at the site for the same purpose.

B. Oversight by the Engineer does not relieve the Contractor of performing quality control inspections of either on-site or off-site Contractor's or subcontractor's work.

C. The Engineer may perform acceptance testing of all or portions of the Work at his/her discretion.

3.10 NON-COMPLIANCE

A. The Engineer will notify the Contractor of any non-compliance with any of the foregoing requirements. The Contractor shall, after receipt of such notice, immediately take corrective action. Any notice, when delivered by the Engineer or his/her authorized representative to the Contractor or his/her authorized representative at the site of the work, shall be considered sufficient notice.

B. In cases where quality control activities do not comply with either the CQC Program or the contract provisions, or where the Contractor fails to properly operate and maintain an effective Quality Control Program, as determined by the Engineer, the Engineer may:

1. Order the Contractor to replace ineffective or unqualified quality control personnel or subcontractors.

2. Carry out the functions and operations of the Contractor's approved Quality Control Program. Costs incurred by the Owner to operate the Quality Control Program or to otherwise remedy the Contractor's non-

compliance with quality-related provisions of the Contract shall be deducted from the total amount due the Contractor. This deduction shall be based on the actual cost to the Owner for operation of the Quality Control Program, as opposed to the amount that the Contractor may have bid initially for Quality Control services.

3. Order the Contractor to stop operations until appropriate corrective actions are taken.

C. Any failure by the Engineer to notify the Contractor of any non-compliance with any of the foregoing requirements shall not be deemed as a waiver of its enforcement rights hereunder and that the Contractor is still bound by the terms and conditions of said requirement.

PART 4 – MEASUREMENT AND PAYMENT

No separate or extra payment will be made to the Contractor for Quality Control. Payment for Quality Control shall be included in all appropriate items on the Schedule of Prices for which Quality Control is required.

END OF SECTION 01450

PART 1 –GENERAL

1.01 DESCRIPTION OF WORK

Mobilization shall consist of preconstruction expenses and costs of preparatory work and operations performed by the Contractor which occur before 10% of the Awarded Contract Price is earned from other Bid Items. Items that are not to be included in the item of mobilization are:

A. Any portion of the Work covered by a specific Bid Item or incidental work that is to be included in a Bid Item or Items

B. Profit, interest on bond money, overhead, or management costs.

Demobilization shall consist of post-construction expenses and work that occur after 95% of the Awarded Contract Price.

PART 2 –PRODUCTS—*NOT USED*

PART 3 –EXECUTION—*NOT USED*

PART 4 –MEASUREMENT AND PAYMENT

Mobilization and Demobilization will be paid for at the individual Contract lump sum amounts for Mobilization and Demobilization for Deposit 1 and Mobilization and Demobilization for Deposit 2, each of which amount shall include full compensation for furnishing all labor, tools, and incidentals related to Mobilization or Demobilization for work at each respective deposit area, complete in place, as necessary for completion of Contract work and as specified in these Specifications.

Based on the lump sum Bid Item prices for “Mobilization and Demobilization for Deposit 1” and “Mobilization and Demobilization for Deposit 2,” partial payment will be made as follows:

A. When 10% of the Awarded Contract Price is earned, excluding mobilization and amounts paid for materials on hand, 60% of the amount bid for “Mobilization and Demobilization” will be paid.

B. When 95% of the Awarded Contract Price is earned from other Bid Items, excluding mobilization and amounts paid for materials on hand, the remaining 40% amount bid for “Mobilization and Demobilization” will be paid.

END OF SECTION 01505

PART 1 –GENERAL

1.01 SCOPE OF WORK

The work presented in this section includes furnishing, setting, maintaining, and operating all equipment specified or necessary to prevent environmental pollution and to minimize environmental degradation during and as a result of both in-water and on-land construction operations. The control of environmental pollution requires consideration of noise levels, air, water, and land. The work also includes implementation and maintenance of pollution prevention Best Management Practices (BMPs) required to control water quality in the Spokane River and its channels, at and around the area of construction.

The Contractor shall conduct its construction operations in such a manner as to comply with all permit conditions and to avoid environmental degradation, and shall comply with all applicable federal, state, and local laws and regulations concerning environmental pollution control and abatement, as well as the specific requirements in these Specifications.

During the conduct of in-water construction operations, the Contractor shall exert great care to control resuspension and spreading of contaminated sediments and to prevent potential recontamination and contaminant residuals. The Contractor shall avoid dumping dredged or imported material into waters outside of the excavation or capping areas. Other technical sections may also contain specific requirements for Environmental Protection. Where those specific requirements are in addition to or modify the requirements in this section, the more stringent requirements shall control.

1.02 SUBMITTALS

A. No later than 21 calendar days after receipt of Contract award, the Contractor shall submit an Environmental Protection Plan (EPP) for approval by the Engineer. The Contractor shall begin no work until the EPP is approved by the Engineer. The EPP shall include, at a minimum, detailed descriptions of the following:

1. Contaminant Prevention. This section shall list all potentially hazardous products, such as petroleum, fuel, and other toxic materials at the job site, and corresponding provisions for preventing accidental introduction of such materials into the air, ground, or any water body. The contamination prevention section shall also include plans for preventing runoff from stockpiling, staging, equipment parking, and maintenance areas from entering unprotected ground or local water bodies. The Contractor shall detail the methods that will be used to monitor the equipment, barges,

trucks, and rail cars (if used) for leakage during loading and transport of dredged or excavated material to the offloading and disposal sites.

2. Contaminant Cleanup. This section shall describe the procedures and materials to be used in the event of an unforeseen incident requiring a containment action. This section shall also detail the procedures, instructions, and reports to be used in the event of an unforeseen incident requiring a containment action, including, at a minimum:

   a) The name of the individual on each shift who will be responsible for implementing and supervising the containment and cleanup.

   b) A list of materials and equipment to be immediately available, as specified herein, including, but not limited to, the following: a 200-foot-long (minimum) containment boom and cleanup kit, absorbent pads, and other materials necessary to safely remove and dispose of the spill material.

   c) The names and locations of suppliers of containment materials and names and locations of additional fuel oil recovery, cleanup, restoration, and disposal equipment available in case of an unforeseen spill emergency.

   d) The methods and procedures to be used for expeditious cleanup.

   e) The name of the individual on each shift who will report any spills and who will follow up with complete documentation.

   f) The requirements for containment and cleanup measures for spills or leakages or other types of releases.

   g) Agencies, individuals, and phone numbers to be contacted on a 24-hour basis.

3. Erosion Control Measures. This section shall address any construction that will disturb upland areas, including (but not limited to) upland excavation, stockpiling, stabilization, regrading, or excavation. Temporary erosion and sediment control measures, such as silt curtains, ditches, dikes, drains, and sedimentation basins, shall be identified. This section shall also indicate potential changes to operations that may be implemented if water quality standards are violated, as well as any other measures necessary to achieve specified water quality.

4. Turbidity Control Measures. This section shall address any construction that has the potential to introduce turbidity into water bodies, including capping, excavation, and backfilling. This section shall describe procedures, materials, product specifications, equipment, and maintenance of turbidity barriers around in-water construction activities, as required for protection of water quality. This section shall also include description of a

regularly scheduled maintenance program for inspecting and maintaining the turbidity control system around all in-water operations.

5. Control of Material Movement During Transfer and Hauling Operations. This section shall include a section describing procedures, equipment, and materials used to prevent loss and spreading of material during transfer and hauling of dredged, excavated, or imported material. In particular, the Contractor shall describe spill prevention measures and contingencies for clean up in the event of spillage.

6. Habitat Protection Measures. This section shall address any construction activities that will disturb sensitive habitat features and native vegetative communities detailed on the Habitat Protection Plan. Temporary road improvements, tree protection details, plant live storage, temporary removal of large woody debris, replanting, and reseeding shall be identified.

B. Daily Reports. During construction, the Contractor shall record on Daily Reports any problems encountered complying with laws, regulations, and ordinances related to Environmental Protection, and any corrective actions taken.

PART 2 –MATERIALS

The Contractor shall provide all materials necessary for accomplishing the requirements of Environmental Protection. This shall include, as a minimum:

A. Materials necessary for cleanup of spills or releases, including, but not limited to: containers, adsorbents, booms, shovels, and PPE.

B. Materials necessary for accomplishing control of turbidity in site surface waters.

C. Materials necessary for accomplishing control of erosion from landside operations into site surface waters.

PART 3 –EXECUTION

3.01 PROVISION OF BEST MANAGEMENT PRACTICES (BMPS)

The Contractor shall provide an effective combination of BMP for control of erosion and sedimentation, for protection of surface waters, and for materials and waste management. Erosion control BMPs may include (but are not limited to): scheduling, slope roughening, preservation of existing vegetation, hydraulic mulches, temporary seeding, soil stabilizers and binders, bonded fiber matrix (BFM), erosion control blankets, and plastic covers. Temporary sediment control BMPs may include (but are not limited to): linear sediment

barriers (e.g., silt fence, fiber rolls, gravel bag berms), sediment traps, storm drain inlet protection, tracking controls, and dust control. BMPs related to materials and waste management may include (but are not limited to): material storage, stockpiles, spill prevention and control, clean up, and waste management.

3.02 TURBIDITY CONTROL

The Contractor shall ensure that all water quality requirements specified in the various applicable permits are met throughout all portions the construction process. An exceedance of water quality criteria is defined as dissolved oxygen (DO) concentrations decreasing by more than 0.2 mg/L relative to upstream conditions and turbidity greater than 5 NTU or 10 percent increase above upstream conditions. The Engineer shall review the Construction Quality Assurance Plan (Appendix B to the Engineering Design Report) for a complete understanding of monitoring requirements that the Engineer will follow.

The Contractor shall install measures to prevent turbidity from escaping from any areas where excavation or backfilling at Deposit 2 will occur. These turbidity control barriers may consist of silt curtains, sand bags, or other mechanisms, subject to the Engineer's approval. The turbidity prevention barriers shall be located no farther than 50 feet from the areas where excavation or backfilling will occur. They shall be installed and their installation approved by the Engineer prior to starting any work in the channels.

If the Contractor elects to use any part of the channels for equipment access, then they shall also ensure that turbidity control barriers are in place to fully surround or encapsulate the areas where equipment traffic will occur in the water. These barriers may be in addition to those described in the previous paragraph. The turbidity prevention barriers shall be located no farther than 50 feet from areas where equipment traffic will occur.

In the event of a confirmed exceedance of water quality criteria, the Contractor will be notified, and shall inspect their turbidity control barriers and perform any repairs needed, or modify its operations in order to return its operation to compliance with the water quality criteria. If water quality criteria are still not achieved 30 minutes after the repairs and/or modifications are put into effect, then the Contractor shall suspend, or temporarily cease, their construction operations in order to resolve the cause of the water quality exceedance.

3.03 PROTECTION OF FISH

The Contractor shall seine all fish from within the enclosures formed by their turbidity control barriers at Deposit 2, and shall release all seined fish safely into the surrounding channel waters outside of the barriers. This shall be accomplished prior to any excavation, backfilling, or equipment traffic in the channel areas.

3.04 PROTECTION OF EXISTING VEGETATION

The Contractor shall minimize impacts or damage to existing vegetation, brush, and trees at all times during construction activities in accordance with the Habitat Protection Plan detailed in the construction drawings.

3.05 SPILL PREVENTION AND CLEANUP

In the event of a spill or release of a hazardous or contaminated substance, pollutant, or oil, the Contractor shall notify the Engineer immediately. Immediate actions shall be taken to implement the Contaminant Cleanup portion of the Contractor's EPP, and thereby minimize the effect of any spill or leak. Cleanup and disposal of cleanup materials shall be in accordance with applicable federal, state, and local regulations. Additional sampling and testing shall be performed at the direction of the Owner or the Engineer.

Cleanup and testing of spills shall be done at no additional cost to the Owner. Any direction from the Owner or Engineer concerning a spill or release shall not be considered a change under the contract.

PART 4 – MEASUREMENT AND PAYMENT

Environmental Protection will be paid for at the Contract lump sum amount for Environmental Protection, which amount shall include full compensation for furnishing all labor, tools, and incidentals and for doing all the work of Environmental Protection, complete in place, including preparation and implementation of submitted workplans; materials, installation, and maintenance of silt curtains, turbidity control barriers, and other required BMPs; and clean up of all items and installations related to environmental control, as necessary for completion of Contract work and as specified in these Specifications.

END OF SECTION 01560

Division 2
Site Work

PART 1 –GENERAL

1.01 DESCRIPTION OF WORK

The Contractor shall prepare access routes on the site for equipment traffic and staging/stockpiling areas for temporary storage of excavated materials. This work shall also include restoration of access routes and staging/stockpiling areas to their pre-existing conditions.

1.02 SUBMITTALS

No later than 21 calendar days after receipt of Contract award, the Contractor shall prepare and submit a Site Preparation Work Plan for approval by the Engineer. No work shall begin until the Work Plan is approved by the Engineer. This Work Plan shall include, at a minimum, detailed descriptions of the following items related to site preparation and shall be in accordance with the Habitat Protection Plan detailed in the construction drawings:

A. Access routes for on-site equipment involved with excavation and for transport and hauling of excavated materials.

B. Methods, equipment, and materials that will be used for establishing access routes.

C. Methods, equipment, and materials that will be used for constructing the required staging/stockpiling area.

D. Sequencing plan and construction schedule detailing how the work will be completed.

PART 2 –MATERIALS

2.01 NATIVE VEGETATION RESOURCES

During restoration of the site following construction activities, the Contractor shall use the native plantings and hydroseed mix that are detailed in the Habitat Protection Plan in the construction drawings.

PART 3 –EXECUTION

3.01 PREPARATION OF HAUL ROUTES AND STOCKPILE AREAS AT DEPOSIT 1

The drawings show the location of the haul route. The Contractor shall improve the haul route as necessary to handle truck and equipment traffic. An access gate shall be installed in the fence as shown on the drawings. The gate shall be able to be locked and

shall be a full height chain link fence similar to the adjacent fencing. At the end of the project the gate and haul road shall remain. The condition of the gate and haul road shall be acceptable to the Engineer at the end of the project.

3.02 PREPARATION OF HAUL ROUTES AT DEPOSIT 2

A. Acceptable Haul Routes

The Contractor's haul and access routes at Deposits 2A and 2B shall be located in the areas identified on the Plans. The Contractor shall conform their access to the specific upland route (or routes) or in water routes to access the Deposits as shown on the Drawings

In preparing their haul and access routes, the Contractor shall minimize removal of vegetation and impacts to native plant communities. Removal of any trees larger than 10 feet in height is prohibited.

B. Coordination of Haul Routes with Centennial Trail

The Contractor shall minimize interference of their haul routes with the Centennial Trail. No more than one crossing of the Centennial Trail will be permitted.

The Centennial Trail will be open to pedestrian traffic during construction. The Contractor shall employ flaggers as needed at each crossing of the Centennial Trail during all hours of active construction work.

C. Stabilization and Regrading

The Contractor may elect to install stabilizing measures for their haul routes (crushed rock, filter fabrics, etc.), provided that these measures are completely removed and the area returned to their pre-existing condition at the end of the project. Similarly, the Contractor may perform minor regrading in order to improve access for their haul routes, provided that such grading is approved by the Engineer, does not destabilize existing areas or slopes, and the area graded back to its pre-existing topography at the end of the project.

3.03 PREPARATION OF STAGING/STOCKPILING AREA AT DEPOSIT 1

The staging/stockpiling area available to the Contractor is shown on the drawings. The Contractor will be allowed to grade the area as necessary to make a level working surface. However, the Contractor shall not excavate more than 2 feet below the existing grade. Grading of piles is acceptable. There are roughly 50 cubic yards of asphalt debris on site that the Contractor shall haul off and properly dispose as part of site preparation.

The Contractor shall ensure that the capping materials do not mix with the existing soils at the site. The Site Preparation work plan shall describe in detail how this will occur. The Contractor shall employ necessary methods to prevent erosion of the stockpiled capping materials from leaving the site. The Contractor shall also prevent the loss of material between the stockpile and the haul barges. The Site Preparation work plan shall describe in detail how this will occur.

The stockpiles of different materials shall be clearly marked and not allowed to mix.

All equipment and stockpiles shall be kept below the elevations shown on the drawings to eliminate any interference with Felts Field operations. Dusts on the haul road and stockpile areas shall also be controlled to eliminate any interference with Felts Field operations.

3.04 PREPARATION OF STAGING/STOCKPILING AREA AT DEPOSIT 2

Prior to any clearing, grubbing, debris removal, or excavation activity at the site, a sediment staging/stockpiling area shall be constructed in the area identified on the Drawings.

In preparing the staging/stockpiling area, the Contractor shall minimize removal of vegetation. Removal of any larger than 10 feet in height is prohibited.

The staging/stockpiling area shall be enclosed by a suitable barrier (Jersey barrier, "ecology" blocks or similar method). Vehicle access points to the staging/stockpiling area shall also be bermed. The staging/stockpiling area shall be encircled by a chain-link fence that can be completely closed off and locked shut during off-construction hours.

The staging/stockpiling area shall be sectioned into two portions, as follows:

A. Contaminated Sediment Stockpiling Area

The first section of the Deposit 2 staging/stockpiling area shall be designated for the stockpiling of the contaminated sediments. This area shall be enclosed by a suitable barrier and lined along the bottom and inside of the enclosure with an impermeable liner of polypropylene with a minimum thickness of 10-mils, to prevent water or sediment from leaving the stockpile and entering the underlying ground. Adjacent sections of impermeable liner shall be seamed.

The ground surface on which the impermeable liner is to be placed shall be free of rocks greater than 0.5 inches in diameter, and any other objects which could damage the liner.

The contaminated sediment stockpiling area shall be equipped with a sump for collection of generated liquids. Liquid collected from the sump shall be properly disposed.

B. Clean Import Fill Stockpiling Area

The second section of the Deposit 2 staging/stockpiling area shall be designated for use as a staging area for delivery of the clean backfill material. Stockpiles in this area shall be sufficiently protected by the Contractor from environmental conditions such as wind and rain.

3.05 SITE CLEANUP REQUIREMENTS AT END OF CONSTRUCTION AT DEPOSIT 1

The haul roads and fence gate shall be left in working condition at the completion of the project. The stockpile/staging area shall be graded to drain to the north or east. All cap materials shall be removed from the site.

3.06 SITE CLEANUP REQUIREMENTS AT END OF CONSTRUCTION AT DEPOSIT 2

All materials placed for the purposes of preparing haul routes or staging/stockpiling areas on the site shall be removed in their entirety at the end of construction, and the affected areas returned to their pre-existing conditions, including hydroseeding and plantings as required in the Habitat Protection Plan.

PART 4 –MEASUREMENT AND PAYMENT

Site Preparation will be paid for at the individual Contract lump sum amounts for Site Preparation for Deposit 1 and Site Preparation for Deposit 2, of which each amount shall include full compensation for furnishing all labor, tools, and incidentals related to Site Preparation for each respective deposit area, complete in place, as necessary for completion of Contract work and as specified in these Specifications.

END OF SECTION 02200

PART 1 –GENERAL

1.01 DESCRIPTION OF WORK

A. Capping

The work associated with this Contract includes the furnishing of all labor, equipment, and materials necessary to cap sections of the Spokane River Deposit 1, as described on the Contract drawings and in these specifications.

Dragging or rehandling to obtain final backfill or cap design contours will not be allowed.

B. Backfilling

The work associated with this Contract includes the furnishing of all labor, equipment, and materials necessary to backfill sections of the Deposit 2 excavation as described on the Contract drawings and in these specifications.

1.02 QUALITY ASSURANCE

The Contractor shall provide testing and inspection services, as required. Sampling and testing to ensure compliance with the Contract provisions are the Contractor's responsibility. The Engineer reserves the right to require additional testing as deemed necessary.

1.03 JOB CONDITIONS

A. Character of Materials:

1. Deposit 1. The sediments at Deposit 1 to be capped consist of relatively fine-grained (i.e., silty sand) and wood waste materials that have accumulated within deeper, lower energy portions of the Former Spokane River channel immediately above the Upriver Dam. The sediments are impacted by PCBs. Deposit 1 lateral extents are defined by surface sediments (0 to 10 cm) exceeding 62 µg/Kg dw. Data collected during previous investigations indicate that PCB levels peak at depths well below the sediment surface. Detailed video, bathymetry, dive, and bottom profiling surveys of Deposit 1 were conducted during the remedial investigation to delineate debris that protruded more than 12 inches above the mudline. Relatively little debris was identified in Deposit 1.

2. Deposit 2. See the Excavation and Disposal section for a description of areas where backfilling will occur.

1.04 MISPLACED MATERIAL

Should the Contractor, during the execution of the work, lose, dump, throw overboard, sink, or misplace any material, cap, barge, machinery, or appliance, the Contractor shall promptly recover and remove the same regardless of cause. The Contractor shall give immediate verbal notice, followed by written confirmation, of the description and location of such obstructions to the Engineer and shall mark and buoy such obstructions until they are removed. Should the Contractor refuse, neglect, or delay compliance with this requirement, such obstructions may be removed by the Owner or its agents, and the cost of such operations may be deducted from any money due to the Contractor or may be recovered from its bond. The liability of the Contractor for the removal of a vessel wrecked or sunk without its fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the Rivers and Harbors Act of 3 March 1899 (33 U.S.C. 410 et seq.).

1.05 DEFINITIONS

A. Required Thickness: The minimum thickness to which the each layer of the cap must be placed as a result of the backfilling or capping operation.

B. Allowable Over-Placement: An additional increment of thickness above the required thickness to allow for inaccuracies of the backfilling or capping operation. This is the backfilling or capping tolerance. Material placed within the allowable over-placement will be paid as specified.

C. Over-Placement: Any material placed above the Allowable Over-Placement thickness shall be considered Penalty Over-Placement. The Contractor may be required by the Engineer to remove this material at no cost to the Owner.

1.06 BACKFILLING AND CAPPING PERMITS

A. Permits and Compliance:

Permits, certifications, or orders for backfilling and capping work under this Contract will be issued by the following entities prior to commencement of the work:

1. U.S. Army Corps of Engineers Nationwide 38 Permit
2. Washington State Department of Ecology approvals under the Model Toxics Control Act Consent Decree and Section 401 Water Quality Certification

The Contractor shall be responsible for adhering and conforming to all applicable provisions, conditions, and requirements of these permits.

1.07 PRE-BACKFILL/CAP AND POST-BACKFILL/CAP SURVEYS

A. Pre-Backfill/Cap Surveys:

The Contractor will perform a pre-backfill/cap bathymetric survey before the Contractor commences backfilling and capping work. The post-excavation survey described in Section 02325 (Excavation and Disposal) shall serve as the pre-backfill bathymetric survey at Deposit 2.

B. Post-Base Cap Material Surveys:

The Contractor shall perform a bathymetric survey after the Base Cap material is placed prior to the placement of the armor material.

C. Post-Backfill/Cap Surveys:

After completion of backfilling and capping work by the Contractor, the Contractor will perform a post-backfill/cap bathymetric survey.

1.08 BACKFILLING AND CAPPING WORK PLAN

The Contractor shall submit a detailed, written Capping Work Plan, no later than 21 calendar days after the receipt of Contract award. No capping activities shall begin until the Plan is approved by the Engineer. At a minimum, the plan shall contain the following information:

A. Site preparation activities to be completed at the stockpile location including on-shore and off-shore work.

B. The source of the capping materials. Samples of the material are required by Part 2 of this Section.

C. Description of how the materials will be transported to the site and where they will be stockpiled. A description of how the stockpile material will be loaded onto haul barges shall also be described.

D. The order in which the work is to be performed, indicating the work sequence; the number, types, and capacity of equipment to be used; hours of operation; methods of operation; and the time required to complete each activity. A list of key personnel and the supervisory chain of responsibility will be included.

E. Procedures and equipment for coordinating and performing hydrographic progress surveys. Layout of the work and positioning of cap equipment, including details on how survey control for cap placement, need to be specified.

F. Procedures for environmental monitoring, including procedures for emergency spill containment and removal operations.

G. Procedures for moving and anchoring the equipment as the capping work progresses.

H. Procedures for placing cap material and ensuring appropriate lift thicknesses.

I. Procedures for monitoring the rate of cap placement, including the positioning system, method for determine rate of capping material, and other associated methods.

J. Quality control/quality assurance methods to monitor the lift thickness, capping volumes placed, and rate of cap placement.

K. Means and methods to evaluate the physical and chemical characteristics of capping material being brought to the site.

L. Means by which equipment will access the Deposit 2 areas, and transportation routes for delivery of imported backfill to the Deposit 2 backfill areas

M. Equipment that will be used for placing backfill in excavated areas of Deposit 2

N. Methods of placing and tamping backfill in Deposit 2

O. Means by which the Contractor will verify proper placement of backfill to the specified grades

1.09 GENERAL

A. The Contractor shall submit daily Capping Reports, which shall contain tabulated summaries of the following:

1. Shipping receipts and material volumes for all shipments of import fill materials
2. Daily volumes of different materials placed
3. Daily areas of cap placed
4. Hours of cap placement operation
5. Equipment used
6. Weekly survey measurements of material placed.

PART 2 –PRODUCTS

2.01 GRANULAR BITUMINOUS COAL

As specified in Section 02300 – Earthwork

2.02 BASE CAP MATERIAL

As specified in Section 02300 – Earthwork

2.03 ARMOR MATERIAL

As specified in Section 02300 – Earthwork

2.04 BACKFILL MATERIAL

As specified in Section 02300 – Earthwork

PART 3 –EXECUTION

3.01 QUALITY CONTROL

Execution and documentation of the Contractor's Quality Control activities related to this section of the specifications shall be done in accordance with Section 01450 – Quality Control.

3.02 ORDER OF WORK

A. Capping

1. Prior to initiating the capping operations, the Contractor shall demonstrate their approach and techniques with a Pilot Cap. The Pilot Cap location is shown on the drawings. The intent of the Pilot Cap is to observe the Contractor's proposed methods of capping for compliance with the performance criteria, to assess the Contractor's proposed quality control method, and confirm required thickness and extent of capping material. The Contractor may need to adjust their production capping methods based on the results of the Pilot Cap.

2. The Contractor shall also develop a method to determine the average thickness of cap material being placed. This method shall be described in the Contractor's Capping Work Plan, used during Pilot Capping, adjusted as necessary based on observations during Pilot Capping, and used during Production Capping. The method may include: daily cores, sample buckets placed prior to capping, bathymetric surveys, or other method mutually agreed to by the Contractor and Engineer. The Engineer may also do additional verification sampling during the Pilot Capping phase and throughout the project.

3. Production capping (i.e., not Pilot Capping) shall be performed from the upstream to downstream direction at Deposit 1.

4. The Granular Bituminous Coal layer shall be placed first. Spreading or sprinkling the dry coal material directly onto the water's surface will be problematic, in that some of the finer particles may not penetrate the water surface due to surface tension effects. To avoid surface tension and inadequate placement, the Contractor shall saturate the coal before

placement. The Granular Bituminous Coal material shall be lowered by bucket to no greater than 2 feet above the riverbed.

5. The thickness of the coal layer shall be confirmed prior to placement of the Base Sand Cap material. The intent is that the Contractor will place the entire Granular Bituminous Coal layer before placing the Base Sand Cap material. However, if the Contractor determines that the Granular Bituminous Coal layer is eroding due to currents, the Granular Bituminous Coal layer and Base Sand Cap layers shall be placed in sections.

6. The Armor Material shall be placed once the entire Base Cap Layer is placed. The thickness of the Base Sand Cap layer shall be confirmed by cores before the Armor Layer is placed.

7. The Engineer will complete coring in the Granular Coal and Base Sand Cap layers during placement to confirm attainment of minimum thicknesses. Cores will be completed randomly within 50-foot by 50-foot grids in the capping area.

B. Backfilling

No backfilling at Deposit 2 shall be completed until all excavation work is approved by the Engineer.

3.03 CONDUCT OF CAPPING AND BACKFILLING

A. General

1. The Contractor shall furnish and place materials to cap portions of Site as shown on the Contract Plans.

2. The Contractor may be required to remove any cap material that is deposited other than in the area indicated on the Contract Plans, or other than as approved by the Engineer and deposit it where directed at its own expense.

3. Capping on slopes shall be conducted from the toe of the slope upward.

4. Barge spuds or other anchoring devices shall not be used in areas in which any capping materials have been placed (including the first layer of the caps). The Contractor shall utilize other methods of anchoring outside of the limits of placed cap material. The Contractor's anchoring methods shall be described in the Capping Work Plan.

5. The Contractor shall conduct vessel movement operations in such a way that propeller wash and/or vessel grounding do not contribute to bottom sediment resuspension and or/erosion, especially within capped areas.

6. The Contractor shall avoid placement operations that result in an excessively thick cap layer. The Contractor shall avoid capping operations that result in areas where the cap thickness exceeds the allowable over-placement. In such areas, the Engineer may direct the Contractor to remove material that comprises the extra cap thickness at the Contractor's expense.

7. The Contractor shall perform surveys as required to verify that the required limits and thickness have been achieved.

8. The first layer of the cap material shall be placed with care so as to minimize disturbance of the underlying on-site material.

9. After the Granular Bituminous Coal layer of material has been placed, the Contractor may utilize any appropriate capping method to place the Base Sand Cap and Armor layer that does not impact the previously placed layer.

B. Placement of Backfill at Deposit 2

Once the excavation of contaminated material from Deposit 2 is complete and fully approved by the Engineer, the excavated areas at Deposit 2 shall be backfilled with Backfill Material such that it is returned to its pre-excavation elevations.

When placed, Backfill Material shall be free of debris, fines, or other deleterious material. Backfill Material shall be placed in individual lifts not to exceed 12 inches in loose thickness. Each lift shall be lightly tamped by mechanical action (such as with a bucket or traveling over with the equipment), over the entire surface of the lift, to increase its placed density.

The Contractor shall minimize impacts or damage to existing vegetation, brush, and trees at the site at all times during all activities related to hauling and placing backfill material.

The Contractor may elect to perform backfilling of each entire Deposit 2 area at once, or may subdivide each backfill area into no more than three individual segments. The Contractor shall notify the Engineer at least 48 hours prior to completion of backfilling in any area or segment, so that the Engineer can schedule a visit to verify that the backfilling has reached the specified elevation.

C. Cap Thickness Verification

Thickness of the Deposit 1 Granular Bituminous Coal and Base Sand Cap layers will be confirmed by advancing cores through the two materials and visually inspecting. Thickness of the Armor Material layer will be confirmed by

evaluating the difference in the post-cap bathymetric survey and the post-Base Sand Cap survey.

Thickness of the Deposit 2 backfill will be confirmed by evaluating the difference between the post-excavation survey and the post-backfill survey.

In addition, the Contractor shall perform the following surveys:

1. Pre-Construction Survey: This shall include a survey of the existing site conditions prior to the start of construction.
2. Final Acceptance Survey: Final surveys shall be performed to confirm that the work conforms to the lines and grades shown on the Plans. At a minimum, surveys shall be completed at the following stages of the capping:
    a) Prior to initiating capping activities. This will include post-excavation surveys in area requiring dredging prior to capping.
    b) After completion of the Base Sand Cap layer at Deposit 1.
    c) After completion of the final layer of cap and backfill placement.

3.04 RANGES, GAUGES, AND HORIZONTAL AND VERTICAL CONTROL

A. Layout of Work:

The Contractor shall ensure that all required gauges, targets, ranges, and other survey markers are in place and properly maintained. The Contractor shall install sufficient tide gauge(s) or staff(s) at the backfilling and capping locations so that the backfill and cap operator(s) and hydrographic surveyors can observe the water level at all times.

An accurate method of horizontal control shall be established by the Contractor before backfilling and capping begin. The proposed method and maintenance of the horizontal control system shall be subject to the approval of the Engineer; if, at any time, the method fails to provide accurate location for the backfilling and capping operations, the Contractor may be required to suspend its operations. The Contractor shall lay out its work from horizontal and vertical control points indicated on the Contract drawings and shall be responsible for all measurements taken from these points. The Contractor shall furnish at its own expense all stakes, templates, platforms, equipment, range markers, transponder stations, and labor as may be required to lay out the work from the control points shown on the Contract drawings. It shall be the responsibility of the Contractor to maintain all points established for the work until authorized to remove them. If such points

are destroyed by the Contractor or disturbed through its negligence prior to authorized removal, they shall be replaced by the Contractor at its own expense.

B. Positioning Equipment and Methods:

The Contractor shall employ a suitable method to locate and control horizontal capping position that may include: Differential Global Positioning System (DGPS); sextant angle triangulation; theodolite/transit angle triangulation; range-range electronic positioning system; or range-azimuth electronic positioning system. Observation data will be recorded in a standard format surveying field book. An electronically recording DGPS system is preferred.

C. Pre- and Post-Backfill/Cap Surveys:

The post-excavation survey described in Section 02325 (Excavation and Disposal) shall serve as the pre-backfill bathymetric survey. Upon completion of backfilling and capping, as demonstrated by daily Contractor progress surveys, the Contractor will notify the Engineer and request that a final post-backfill/cap bathymetric survey be conducted.

The pre- and post-backfill/cap surveys will be used as the basis for determining the conformance of the Contractor's work to these specifications as well as the observations from the cores. Upon request, the Contractor will be provided with a copy of the bathymetric soundings and the quantity calculations.

D. Bathymetric Equipment and Methods:

The Contractor's progress surveys shall be conducted using a survey-grade depth sounder and an electronic distance measuring device. Bed elevations, converted to NAVD88, shall be determined using depth soundings and tide gauge readings for each trackline. Water level and other corrections shall be applied, and corrected depth shown on the survey sounding sheets. Accuracy for measured depths shall be +/- 0.3 foot; accuracy of horizontal positions shall be +/- 3 feet. Backfill locations may be surveyed 'in the dry' with standard terrestrial survey equipment at the Contractor's discretion, provided the survey is of the required accuracy and matches the bathymetric survey.

E. Ranges and Tide Gauges:

The Contractor shall furnish, set, and maintain in good order all ranges, buoys, and other markers necessary to define the work and to facilitate inspection. The Contractor shall establish and maintain a river stage gauge or board in a location where it may be clearly seen during capping operations and inspections. The Contractor may be required to suspend backfilling and capping when the gauges or ranges cannot be seen. All costs for providing the tide gauges and other survey control shall be included in the bid price for backfilling and capping operations.

3.05 SOURCE OF BACKFILLING AND CAPPING MATERIAL

The Contractor shall provide all the backfilling and capping material in accordance with Section 02300 (Earthwork). The Contractor shall identify the source of the backfill and capping material in the Capping Work Plan.

3.06 WATER QUALITY MONITORING

Water quality monitoring will be performed by the Owner's representatives. The Contractor shall familiarize themselves with water quality requirements and with the Owner's monitoring plans and activities. In the event of a water quality exceedance, the Contractor will be required to modify their procedures, methods, or equipment appropriately so as to remedy the exceedances, at no additional expense to the Owner.

3.07 FINAL PREPARATION OF BACKFILLED SITE

Upon completion of the backfill, the deposit and excavation area will be restored by the contractor to its approximate pre-excavation condition in order to preserve the shoreline and river riparian/backwater habitat surrounding Deposit 2.

3.08 FINAL EXAMINATION

The Contractor shall notify the Engineer at least 5 days prior to anticipated completion of capping activities. After the capping is complete, the Owner may conduct an independent post-cap survey. If Engineer's analysis of the Contractor's post-cap survey and/or the Owner's independent survey confirms the project to be in satisfactory condition, the work will be accepted as complete. Should the work be determined to be incomplete or if Penalty Over-Placement material is present, the Contractor shall immediately perform such additional work as may be necessary to satisfactorily complete the project, as determined by the Engineer. If all of the sediment has not been satisfactorily capped, as determined by the Engineer, the Contractor shall cap the "low spots" indicated in the cross-sections and the area will be rechecked by the Owner. Costs for the Owner's initial independent will be the Owner's responsibility. Costs for the Owner's independent follow-up surveys to verify completion of the work initially deemed incomplete shall be deducted from payments due the Contractor.

PART 4 –MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

A. The total amount of material placed for the Granular Bituminous Coal as required by these Plans and Specifications will be paid for as a lump sum.

B. The total amount of material placed for the Base Sand Cap as required by these Plans and Specifications will be paid for as a lump sum.

C. The total amount of material placed for the Armor Material as required by these Plans and Specifications will be paid for as a lump sum.

D. Payment for Deposit 2 Backfilling is described in Section 02325 Excavation and Disposal.

4.02 PAYMENT

Payment shall be full compensation for furnishing, loading, transporting, handling, and placing capping materials in accordance with these Specifications and the Plans. Any capping material furnished, loaded, transported, handled, and/or placed that does not comply with these Technical Specifications will not be paid for.

END OF SECTION 02316

PART 1 –GENERAL

1.01 DESCRIPTION OF WORK

The designed remedy for Deposit 2 includes removal of sediments containing PCB concentrations above the designated sediment cleanup level of 62 µg/Kg. Excavated sediments shall be temporarily stockpiled in the specified area on site and disposed at an approved landfill.

The areas from which sediment has been excavated shall be subsequently backfilled with clean sand and gravel (as is specified in Section 02316 – Backfilling and Capping).

1.02 CONDITION OF SITE AND SEDIMENTS

The drawings define the lateral extent of materials to be excavated. Depths of excavation are shown on the drawings.

The Deposit 2 sediments cover an area of approximately 0.25 acres in an emergent wetland area, within north bank side channels near Donkey Island at RM 83.4. The sediments requiring excavation are recently deposited, unconsolidated, fine-grained, materials that have come to reside in backwater channels in the Donkey Island area. These sediments are classified as silty sand. Occasional gravels and cobbles are within the material to be removed. They typically overlie a layer of larger riverine materials (i.e., gravel and cobbles).

Removal of these sediments from the site is required because the sediment contains concentrations of PCBs in excess of the regulated cleanup level of 62 µg/Kg (dry weight). The thickness of sediments with elevated PCB concentrations ranged from 4 inches to as much as 18 inches, based on a series of sample cores advanced during the project design process. The specified excavation depths are based on the results of these sample cores, and is expected to generally correspond to the thickness of the soft sediments.

Besides the backwater channel, there are also trees, bushes, and a steep slope in the general vicinity of Deposit 2. These will make site access difficult.

1.03 DEFINITIONS

A. Contaminated Sediment (Unsuitable Sediment):

Excavated material above the required dredge elevation that will require removal and off-site disposal at an approved upland landfill facility.

B. Required Excavation Elevation:

The minimum elevation within a excavation area above which the Contractor is required to remove all material.

C. Allowable Overdepth Excavating:

An additional increment of 6 inches below the required excavation elevation will be paid for to account for equipment tolerance. Excavating beyond the allowable overdepth elevation is called excessive excavation and will not be paid.

D. Excessive Excavation:

Material outside of the excavating limits and below the allowable overdepth elevation is excessive excavating. Excessive excavation volumes will be deducted from the total required excavated material volume and the allowable overdepth volume when determining pay volumes. The Contractor will be responsible for the cost of disposal of this material and may also be required to backfill excessive dredged areas with clean material at the Contractor's own expense.

E. Pay Volume:

Pay volume is the calculated quantity of in-situ excavated material that will be paid to the Contractor. The pay volume for excavating will be determined by calculating the total amount of in-situ material excavated (based on pre-excavation and post-excavation surveys), minus excessive excavating.

1.04 SUBMITTALS

No later than 21 calendar days after receipt of Contract award, the Contractor shall prepare and submit a Deposit 2 Excavation and Backfilling Work Plan for approval by the Engineer. This work plan shall include, at a minimum, detailed descriptions of the following items related to excavation and disposal:

A. Equipment that will be used for excavation, and for transport and hauling of excavated materials

B. Methods of excavation

C. Estimated duration of excavation activity, including anticipated cubic yards of excavated material generated daily

D. Means by which limits and depths of elevation will be checked by Contractor

E. Selected disposal facility, with documentation of their acceptance (or conditional approval) of the waste

F. Transportation route to selected disposal facility

If the Deposit 2 Excavation and Backfilling Work Plan is judged unsatisfactory to the Engineer, then it will be returned to the Contractor for amendment and resubmission. No physical work at the Deposit 2 site shall be started until the Deposit 2 Excavation and Backfilling Work Plan is approved.

PART 2 –MATERIALS—*NOT USED*

PART 3 –EXECUTION

3.01 PREPARATION

A. Environmental Protection measures (sand bags or silt curtains) shall be in place and approved prior to beginning excavation work.

B. Temporarily remove dead trees and floating branches from Deposit 2 area where they would interfere with excavation. Any branches or dead trees that are 4 inches in diameter or greater, and 15 feet in length of more, shall be set aside for reinstallation at the end of the project. Smaller woody material shall be disposed off-site.

3.02 EXCAVATION

A. Excavate every type of material encountered within the limits, lines, and grades specified on the Drawings. Six (6) inches of vertical over-excavation is allowed for Deposit 2 excavation.

B. Maintain side slopes of excavations so that they remain stable and free of sloughing soil.

C. Avoid recontamination of previously excavated areas. Do not drive equipment over previously excavated areas after running the equipment through non-excavated areas where contaminated soft sediment is present. Follow requirements of Section 01560 Environmental Protection to avoid spillage and other activities that could recontaminate areas.

D. Avoid spillage of excavated materials or water when placing into haulers or containers at the point of excavation, or while hauling the excavated materials or water on site. No sediment or free water shall be allowed to escape onto bare land or into the surrounding environment outside the current edges of the channels. In the event that spillage of excavated materials or water occurs onto the land surface, the Contractor will be required to clean up the area of the spillage to the Engineer’s satisfaction, at no additional cost to the Owner.

E. During the conduct of in-water excavation operations, the Contractor shall exert great care to control resuspension and spreading of contaminated sediments and to prevent potential recontamination and contaminant residuals.

F. The Contractor shall minimize impacts or damage to existing vegetation, brush, and trees at all times during excavation.

3.03 VERIFICATION OF EXCAVATED DEPTHS

A. The Contractor shall notify the Engineer at least 3 days prior to completing excavation in any prescribed portion of the area, so that the Engineer can collect surface sediment samples for that area.

B. For each completed excavation area, the Engineer will confirm whether the target elevation has been reached. If not, then the Contractor shall resume excavation in areas and to depths as directed by the Engineer.

3.04 SURVEYS

A. Pre-Excavation Survey at Deposit 2

The Drawings show bathymetric conditions in Deposit 2 as of the most recent survey, dated April 15, 2006 by Scott Valentine Surveying. This survey will serve as the Pre-Excavation Survey for the basis of Payment.

B. Post-Excavation Survey at Deposit 2

After all excavation has been completed and the area determined to be complete, the Owner will perform a Post-Excavation Survey. The Post-Excavation survey will be used by the Owner as the basis for acceptance of the work, and for payment quantity calculations.

If the Post-Excavation Survey reveals that the excavation has not been satisfactorily completed throughout the specified areas, as determined by the Engineer, the Contractor shall excavate the “high spots” indicated by the survey, and the re-excavated areas checked again by the Engineer through a resurvey. The cost for such a resurvey will be deducted from the payment to the Contractor.

Final payment quantities for Excavation and Disposal will be calculated by the Engineer, based on in-situ volumes, to the nearest cubic yard. The difference between the pre-excavation survey and the (final approved) post-excavation survey will be computed using the digital Triangular Integration Network (TIN) method. The pay quantity for Excavation and Disposal will be determined from the difference between the two surveys, minus the volume of excavation from below or outside of the specified excavation and its allowable tolerances.

3.05 STOCKPILING AND DISPOSAL OF EXCAVATED SEDIMENT

A. The excavated material from Deposits 2A and 2B will be placed within the specified staging/stockpiling area (described in Section 02200 – Site Preparation), and allowed to passively dewater prior to shipment to the disposal facility.

B. Any water that is collected at the stockpiling area shall be collected in a sump and discharged back to the Deposit 2 area. Before the water enters the sump, the water shall be filtered of fines using hay bales, filter fabric, rock, or equivalent.

C. All filtration media or materials will be properly disposed of as solid waste.

D. Cover stockpiles as necessary to prevent precipitation from entering the stockpile and to prevent loss of stockpiled materials from wind or other conditions.

E. The Contractor shall minimize impacts or damage to existing vegetation, brush, and trees at the site at all times, during hauling of excavated sediment to the staging/stockpiling area and hauling of excavated sediment or collected water to an off-site locations.

F. Avoid spillage of excavated materials or water when hauling the excavated materials or water off the site. No sediment or free water shall be allowed to escape onto bare land or into the surrounding environment. In the event that spillage of excavated materials or water occurs onto the land surface, the Contractor will be required to clean up the area of the spillage to the Engineer's satisfaction, at no additional cost to the Owner.

G. In order to pass the Paint Filter Liquids Test that may be required at some disposal facilities, the contractor may elect to mix approved additives (i.e., cement or cement kiln dust) with the sediments to bind the available water.

H. Depending on the facility utilized for disposal, the excavated material may be taken in trucks directly to the landfill, or to the landfill operator's rail transfer station, where it will be loaded on rail cars for shipment. The contractor will utilize appropriate controls, such as lining of truck beds or rail containers, and/or covering of loads, to prevent any loss of dredged material during transport. Special care will be taken to prevent spillage onto public roadways or adjacent property and any such spillage will be promptly cleaned up. Some regional disposal facility locations for the excavated sediment are listed below. This is not a complete list of locations and the contractor may elect to propose another location for approval:

1. Regional Disposal Company
   Roosevelt Regional Landfill
   Klickitat County, Goldendale, WA
2. Oregon Waste Systems (Subdivision of Waste Management, Inc.)
   Columbia Ridge Landfill and Recycling Center
   Arlington, OR

The contractor will make arrangements for transportation and disposal or treatment of the excavated material with the upland disposal facility operator. However, the responsibility for satisfactory disposal or treatment will remain with the contractor.

3.06 SITE RESTORATION

All haul roads, stockpiles/staging areas, and construction areas shall be restored to the preconstruction conditions as described in the Habitat Protection Plan prior to demobilization. See Section 02200 for details.

PART 4 –MEASUREMENT AND PAYMENT

Excavation, Disposal, and Backfilling will be measured by the in-situ cubic yards of material excavated, by computing the volume difference between the channel bottom surface indicated by the pre-construction survey and the channel bottom surface indicated by the post-excavation survey, minus material excavated below the allowable excavation tolerance or outside of the specified excavation limits.

The Contract unit price for Excavation, Disposal, and Backfilling shall include full compensation for furnishing all labor, tools, materials, and incidentals for doing all the work of Excavation and Disposal, complete as shown on the Drawings and as specified in the Specifications, including: removing sediment to the specified limits and elevations; management and stockpiling of the excavated sediments; collection, treatment, and disposal of water; transporting sediments to an approved upland landfill; placement of sediment at the disposal facility, including any disposal fees and full compensation for furnishing all labor, tools, materials, and incidentals for backfilling the excavated areas back to their original grade, as is specified in Section 02316 – Backfilling and Capping.

The estimated bid quantity for Excavation and Disposal is for the purpose of establishing a Contract unit price for this item. The Owner reserves the right to vary the actual quantity of Excavation and Disposal from 70% to 140% of the bid quantity at no change in the Contract unit price.

END OF SECTION 02325

PART 1 –GENERAL

1.01 DESCRIPTION OF WORK

The work includes general requirements for backfilling and capping, all as indicated on the Contract drawings.

1.02 QUALITY ASSURANCE

The Contractor shall provide testing and inspection services, as required. Sampling and testing to ensure compliance with the Contract provisions shall be in accordance with Section 01450 (Quality Control) of these specifications and are the Contractor's responsibility. The Engineer reserves the right to require additional testing as deemed necessary.

1.03 STANDARD SPECIFICATIONS

The standard specifications for the work described in this section shall be the Standard Specification for Road, Bridge, and Municipal Construction prepared by the Washington State Department of Transportation (WSDOT) and the American Public Works Association, Washington State Chapter, 2002 Edition (English). This document is available on the World Wide Web at:
http://www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/2002SS.pdf

1.04 SUBMITTALS

The Contractor shall submit test reports for characteristics listed in Part 2.02 of this section for the following materials:

A. Granular Bituminous Coal

B. Base cap material

C. Armor Material

D. Backfill Material

PART 2 –PRODUCTS

2.01 GENERAL

The Contractor shall provide all required materials for the project. Materials shall be of the quality, size, shape, and gradation, or equal to that manufacture, as specified herein.

2.02 BORROW SOURCE AND MATERIALS CHARACTERIZATION

These activities shall be performed by the Contractor as specified below to ensure that imported materials are natural, native, virgin materials and free of contaminants, including debris or recycled materials, and meet construction specifications. The Engineer maintains the right to reject any materials that have been determined to be substandard for any reason. In the event of rejections, it shall be the responsibility of the Contractor to remove all stockpiles of rejected material from the site.

A. General:

A characterization of any and all imported material shall be performed by the Contractor prior to any on-site placement. The characterization will include analysis of a borrow source sample, site inspection, and site characterization.

B. Source Identification:

Prior to borrow source sampling, the Contractor shall provide documentation of the origin of borrow source materials and maps identifying specific location(s) of borrow sources.

C. Sample(s) Provided to the Engineer:

The Contractor shall provide the Engineer with a 2-gallon sample of material from each borrow source. Each sample should be composited from no less than five subsamples taken throughout any one source. The Contractor shall ensure that the samples(s) are representative of all materials to be imported. Sample(s) will be provided to the Engineer at least 14 days before the materials represented by the sample(s) are delivered to the site.

D. Inspection of Source:

The borrow source for materials, except the Granular Bituminous Coal, shall be inspected by the Contractor. During such inspection, the Contractor shall ensure that the materials to be delivered to the site are likely to meet the appropriate specifications. The Contractor shall provide the Engineer with two weeks' notice of such inspections. At the Engineer's discretion, the Engineer or a representative may accompany the Contractor to witness such inspections. This witnessing shall in no way release the Contractor from complying with the specifications and shall in no way be construed as approval of any particular source of material.

E. Testing, Reporting, and Certification:

The Contractor shall test sample(s) of materials to be imported for the following:

1. Grain Size Distribution (American Society for Testing and Materials [ASTM] method D422-63);

2. In-situ Moisture Content (ASTM method D2216);
3. Priority Pollutant Metals (U.S. Environmental Protection Agency [EPA] publication SW846, the 6000/7000 method series);
4. Volatile Organic Compounds (EPA publication SW846, method 8260 as modified by Puget Sound Estuarine Protocols [PSEP]);
5. Semivolatile Organic Compounds (EPA publication SW846, method 8270 as modified by PSEP);
6. Polychlorinated Biphenyls (PCBs) (EPA publication SW846, method 8082 as modified by PSEP);
7. Pesticides (EPA publication SW846, method 8081 as modified by PSEP); and
8. Total Organic Carbon (Standard Methods [SM] method 5310B).

The Contractor shall provide the results of such tests at least two weeks before delivery of the materials to the site. The results shall be provided in report form, with the reports clearly identifying the following:

1. Source of samples.
2. Sampling dates.
3. Chain of custody.
4. Sampling locations.
5. Contractor's certification that the samples tested and the results provided are representative of materials that shall be delivered to the site.

F. Inspection of Materials at the Site:

Truckloads of import material shall be visually inspected by the Contractor upon delivery. Materials shall be inspected for the presence of foreign, recycled, or reprocessed material. The Engineer may at any and all times perform an independent inspection. Material may be rejected if identified as substandard or test results show it to be substandard. Materials may be segregated for testing based on appearance or odor. Segregated materials may be tested according to designated procedures at the Engineer's discretion.

2.03 GRANULAR BITUMINOUS COAL

The Contractor shall use one of the following three sources for the Granular Bituminous Coal:

A. The Spring Creek & Decker Mines in Montana. The specific product is "1/2" X 0." The contact person and their number is:

Neil Musilek
Coal Sales
Decker Coal Company
PO Box 12
Decker, MT 59022
Telephone: (406) 757-2447

B. The "Buckwheat" coal product of Palmer Coking Coal in Black Diamond, WA. Contact information is:

William Kombol, Manager
Palmer Coking Coal Company
P.O. Box 10 / 31407 Highway 169
Black Diamond, WA 98010-0010
Telephone: 425-432-4700
Telephone: 360-886-2841
Fax: 425-432-3883

C. The "Pond Coal" coal product of Elk Valley Coal Corporation. Contact information is:

Richard Dean
Marketing Manager
Elk Valley Coal Corporation
Suite 1000, 205 9th Avenue SE
Calgary, Alberta
T2G 0R3
Telephone: (403) 460-9800
Fax: (403) 265-8794

Physical and chemical descriptions of both materials can be found in Anchor Environmental LLC Technical Memorandum (30 Percent Design): Spokane River Upriver Dam PCB Sediments Site, Prepared for Avista Development, Inc., February 2006. Appendix A—Fall 2005 Coal Sampling and Analysis Data contains all of the raw data.

2.04 BASE CAP MATERIAL

A. Base cap material shall be clean, free-draining sand from a recognized and established borrow site. The material shall be free of all objectionable coating

and shall meet Ecology's 2003 Freshwater lowest apparent effects threshold (LAET) chemical guidelines.

B. Material shall be graded between the limits specified below:

Sieve Size	Percent Passing (by weight)
U.S. No. 4	100
U.S. No. 10	25 to 100
U.S. No. 40	20 to 60
U.S. No. 200	5 max

2.05 ARMOR MATERIAL

A. Armor material shall be a clean, naturally-occurring round or sub-angular river sandy gravel, primarily (greater than 80 percent) igneous or metamorphic rock. Individual stones shall be generally free of seams, cracks, and other defects tending to destroy it resistance to weather. Bulk material shall be free of soil, clay balls, debris, wood, organic matter and other extraneous material. The material shall be free of all objectionable coating and shall meet Ecology's 2003 Freshwater LAET chemical guidelines.

B. Material shall be graded between the limits specified below:

Sieve Size	Percent Passing (by weight)
4-inch	100
1-inch	50 max
U.S. No. 40	20 max
U.S. No. 200	5 max

2.06 BACKFILL MATERIAL

A. Base cap material shall be clean, free-draining sand from a recognized and established borrow site. The material shall be free of all objectionable coating and shall meet Ecology's 2003 Freshwater LAET chemical guidelines.

B. Material shall be graded between the limits specified below:

Sieve Size	Percent Passing (by weight)
U.S. No. 4	100
U.S. No. 10	25 to 100
U.S. No. 40	20 to 60
U.S. No. 200	10 max

PART 3 –EXECUTION

3.01 EXCAVATION AND DISPOSAL

Excavation of Deposit 2 material shall be made in accordance with the Contract drawings and as described in Section 02325 (Excavation and Disposal).

3.02 CAPPING AND BACKFILLING

Capping and backfilling at Deposits 1 and 2 shall be accomplished in accordance with Section 02316 (Backfilling and Capping).

PART 4 –MEASUREMENT AND PAYMENT

Earthwork materials used in accordance with these specifications and plans will be paid for as described in Section 02316 – Backfilling and Capping.

END OF SECTION 02300